1955

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH, APRIL, 1955

JAN - APR 1955

I. GENERAL

A. Weather Conditions:

The maximum temperature in January was lower than last year, but in February, March, and April it was higher. The minimum temperature in January, February, and March was lower than last year, but April was higher. During the month of April high winds occurred, but no damage was observed.

Relative readings for this period and the same period last year are shown below:

Month	Year	Maximum	Minimum	Precipitation
January	1954	63	4	1.25
	1955	62	0	1.85
February	1954	64	15	1.04
	1955	65	-6	3.28
March	1954	76	15	1.19
	1955	86	5	1.96
April	1954	87	22	1.58
	1955	89	32	2.27
			1954 TOTAL	5.06
			1955 TOTAL	9.36

Precipitation for the period was 9.36, compared to 5.06 for the same period last year.

B. Water Conditions:

The river was higher in all four months than in the same period a year ago. The low readings were higher in every month than last year. There has been no high water in this portion of the river yet. Indications are there might not be any high water this spring.

The fluctuations of the dam were not bad in Pool 26, but there were draw-downs in Pool 25 off and on throughout the period.

A comparison of pool levels in Pool 26, compared to the same period in 1954, is shown in the following table:

Month	Year	High	Low	Difference
January	1954	15.2	14.1	1.1
	1955	16.2	15.0	1.2
February	1954	15.3	14.2	1.1
	1955	16.2	14.9	1.3
March	1954	15.9	14.5	1.4
	1955	16.1	15.3	.8
April	1954	15.7	15.0	.7
	1955	16.4	15.4	1.0

Maximum month variations in 1955 was 1.3, compared with 1.4 in 1954.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

a. Waterfowl:

The duck population was higher this spring in the Calhoun Refuge, but it fell down in the Batchtown Refuge. There was a constant dribble of birds through both areas during the period.

On the Calhoun Refuge the first week in January we had 115,800 ducks, compared with 202,000 ducks the same time last year. The peak concentration of ducks occurred the first week in February, with a peak of 339,300, compared with 303,000 last year. By the second week in February the ducks started to fluctuate up and down. Very few ducks were left in the area at the end of the period.

On the Batchtown Refuge the first week in January we had a population of 41,100 ducks as compared to 152,200 a year ago. This was probably due to the hard freeze up on the Mississippi River. On February 19 we reached a peak of 118,700 ducks as compared to 203,000 ducks last year.

On Calhoun Refuge the first week in January we had 100,000 mallards, which was lower than we had last year. The colder weather was probably the main factor in this decrease.

Black duck were also present at the beginning of the period, with 5,000 birds. This turned out to be the peak concentration for the period.

Gadwall were only observed the 12th week of the period, when 300 birds were present. This was a small increase over last year, when only 200 birds were observed.

Baldpate started to show up February 26, with 200 birds, and reached a peak of 5,000 birds on March 19.

Pintail were here the first week in January, with 5,000 birds, compared with 2,000 birds the same time a year ago. They reached a peak of 20,000 birds March 12, and were last observed the week ended April 9, when 4,000 were present.

Green-wing teal were first observed, with 100 birds the week ended February 19. They reached a peak of 1,000 birds the week ended March 12. They were last observed the week ended April 2, when 200 were present.

Shovellers started to show up March 12, with 500 birds. They reached a peak the week ended March 19, with 1,000 birds. At the end of this period about 100 birds are still here.

Redheads were first observed the week ended January 8, with 200 birds. They reached a peak the week ended February 5, with 1,000 birds, compared with 100 birds a year ago. The week ended February 26 there were 500 birds, for the last observation of the period.

Wood ducks were first observed the week ended March 12, with 300. They reached the peak of 400 birds the week ended March 19. About 100 birds were present at the end of this period.

Scaup were here the week ended January 8, with 100 birds. They reached a peak the week ended April 2, with 20,000 birds. An estimated 400 birds were still present at the end of this period.

Goldeneye showed up the week ended January 15, with 100 birds. They reached a peak the week ended January 29, with 500 birds. They were last observed the week ended March 5, with 200 present.

Buffle-head were not observed in this period. None were observed this period last year either.

Canvas-back were here, with 200 birds, at the beginning of this period, and reached a peak of 25,000 birds the week ended February 5. This species was last observed the week ended March 12, when 100 were seen.

Blue-wing teal were first observed the week ended March 26, with 100 birds. They reached a peak of 8,000 the week ended April 9. At the end of this period 500 birds were present in the area.

Ruddy duck showed up the week ended February 26, with 100 birds. They reached the peak concentration the week ended March 12, with 400 birds.

Mergansers were first observed the week ended January 8, with 300 birds. They reached the peak concentration the week ended February 19, with 1,000 birds.

Waterfowl movement started the week ended February 19, and gradually dwindled down throughout the rest of the period.

On the Batchtown Refuge at the beginning of this period we had 30,000 mallards. They reached their peak February 19, with 100,000 birds. Shortly after this most of these ducks moved to the Sny bottoms. Very few mallards were left at the end of this period.

Black ducks were also present at the beginning of the period, with 500 birds. They reached their peak the week ended February 19, with 2,000 birds.

Gadwall were first observed the week ended April 9, with 1,000 birds. They were not observed again this period.

Baldpate were observed the week ended February 25, with 200 birds. They reached their peak the week ended March 19, with 3,000 birds.

Pintail were observed the week ended January 8, with 6,000 birds. They reached their peak, with 30,000 birds, the week ended March 12. They were last observed the week ended April 9, with 2,000 birds.

Green-wing teal were present on the Batchtown Refuge the week ended February 19, with 200 birds, and they reached their peak the week ended March 19, with 500 birds. They were last observed the week ended April 2, with 200 birds.

Blue-wing teal were observed the week ended March 26, with 100 birds, and reached their peak the week ended April 9, with 5,000 birds. An estimated 500 were left in the area at the end of the period.

Shovellers started to show up in the area the week ended March 19, with 500 birds. This was the peak concentration. An estimated 500 used the area for five weeks.

Wood ducks started to show up the week ended March 12, with 200 birds. They reached their peak, with 400 birds, the week ended March 26.

Redhead were first observed the week ended January 8, with 100 birds, and reached a peak the week ended February 19, with 400 birds. They were last observed the week ended February 26, with 400 birds.

Ring-neck were first observed the week ended January 8, with 1,000 birds. They reached a peak of 2,000 birds the week ended January 29. This number used the refuge for six weeks. They were last observed the week ended April 23, with 100 birds.

Canvas-back were first observed the week ended January 8, with 100 birds. They reached a peak of 1,000 birds the week ended February 12. This number used the area for two weeks. They were last observed the week ended March 12, with 100 birds.

Scaup were here the week ended January 8, with 3,000 birds, and reached a peak of 20,000 birds the week ended April 9. They were last observed the week ended April 30, with 300 birds.

Golden-eye were first observed January 8, with 200 birds. They reached their peak the week ended January 29, with 300 birds. They were last observed the week ended March 5, with 200 birds.

Buffle-head were not observed in the area this period.

Ruddy ducks were first observed in the area the week ended March 5, with 100 birds. These birds were observed for two weeks. They were last seen March 12.

Mergansers were first observed the week ended January 8, with 200 birds, and reached a peak the week ended February 19, with 1,000. Last observed were 100 birds the week ended March 26.

Peak numbers on the Calhoun Refuge were 339,300, the week ended February 5. This compares very favorably with the

peak of 203,150, which occurred a month earlier (week ended January 9) in 1954. This showed peak numbers increased 67% over last year.

The Batchtown peak of 118,700 the week ended February 19 was considerably lower than the peak of 203,000 the week ended January 30 in 1954. This showed peak numbers were down 42% this spring.

An estimated 10,885,700 days use was made of the Calhoun Refuge this spring, compared to 4,947,950 days use a year ago. This represents an increased use of 120%.

On the Batchtown Refuge an estimated 3,692,500 days use was made by ducks, compared to 8,430,800 days use a year ago. Thus, days use was down 56%, compared to the spring of 1954.

Mallards accounted for 2,240,700 days of the 3,692,500 days recorded for the Batchtown Refuge this spring, or 60.68% of total use. Pintails were in second place, with 578,200 days use, or 15.63% of total use. Scaup, in third place with 478,100 days use, accounted for 12.95% of total use.

On the Calhoun Refuge mallards made 8,282,400 days use of the total of 10,885,700 days recorded for the period. Thus, this species alone accounted for 76.08% of all use recorded. The surprising feature about use this spring is the fact that canvas-backs took second place in total use, with an amazing peak of 25,000 birds holding out for three weeks in February. Canvas-backs accounted for 824,600 days use, or 7.58% of total use. Scaup were in third place, accounting for 6.83% of total use, with 743,400 days being recorded.

Thus, it can be seen that mallards are by far the most numerous species to be found in this portion of the Mississippi River, and that puddlers far outnumber the divers in this area. For instance, on the Calhoun Refuge, puddlers made up 84.49% of total use, compared to only 15.51% for divers. On the Batchtown Refuge puddlers made up 82.52% of total use, compared to only 17.48% by divers.

The following table shows peak concentrations of puddlers and divers, together with estimated duck days use, for the Calhoun and Batchtown Refuges:

	Peak Concentrations		Duck Day Use	
	Calhoun	Batchtown	Calhoun	Batchtown
Puddle Ducks:				
Mallard	300,000	100,000	8,282,400	2,240,700
Black	1,000	2,000	67,900	35,700
Gadwall	300	1,000	2,100	7,000
Baldpate	5,000	3,000	95,900	64,400
Pintail	20,000	30,000	588,000	578,200
G.w.teal	1,000	1,000	18,900	17,500
B.w.teal	8,000	5,000	102,200	67,200
Shoveller	1,000	500	25,200	21,000
Wood dusk	400	400	14,700	15,400
TOTALS			9,197,300	3,047,100
Divers:				
Redhead	1,000	400	36,400	6,300
Ring-neck	1,000	2,000	23,100	92,400
Canvas-back	25,000	1,000	824,600	19,600
Scaup	20,000	20,000	743,400	478,100
Golden-eye	500	300	17,500	11,200
Ruddy	400	200	7,000	2,800
Mergansers	1,000	1,000	36,400	35,000
TOTALS			1,688,400	645,400
GRAND TOTALS			10,885,700	3,692,500

Coot peaked at 5,000 birds the week ended April 9 on Batchtown and made 74,900 days use of that refuge. On Calhoun Refuge coot peaked at 6,000 the week ended April 9, and made 91,000 days use of the area.

(b) Geese:

Canada Geese

Some Canada geese remained on the Calhoun Refuge all winter, with 500 present at the beginning of this period. This number built up to 1,000 the week ended January 15, and that number stayed on the refuge for the next eight weeks. They were last seen the week of April 9, when 100 birds remained. Following that date, none were seen on the refuge.

A total of 64,750 days use was made of Calhoun Refuge by Canada geese this period, compared to 71,750 days use made a year ago.

Canada Geese were first observed on the Batchtown Refuge the week ended February 26, with 100 birds present at that time. The peak of 200 occurred the week ended March 12, which was also the last date they were observed on the area.

A total of only 2,800 days use was made of the Batchtown Refuge by Canada geese this spring, while a year ago none occurred at all.

Snow Geese

As the period opened there were 1,000 snow geese on the Calhoun Refuge. Numbers remained constant until the week ended February 5, when the population jumped to 6,000 birds. This number remained throughout February, following which they dropped off sharply. Snows were last seen the week ended April 2, when 50 were seen. Snow geese used Calhoun Refuge a total of 197,750 days this spring, compared to only 58,800 days a year ago, so use increased 236% this period over the same period last year.

On the Batchtown Refuge snow geese were found on two different weeks. The week ended February 26 had 50 present, and the week ended March 12 had 300. No others were seen. Snows used Batchtown only 2,450 days this spring, which was still higher than the 1,400 days recorded a year ago.

Blue Geese

At the beginning of this report period there were 1,000 blue geese on the Calhoun Refuge. As February opened, the number had increased to 5,000, remaining at that level throughout the month. The last blues seen were the 50 present the week ended April 2. Blue geese totaled 173,250 days use on Calhoun this spring, compared to only 56,000 days a year ago, a jump of 209% in total use.

The Batchtown Refuge had blue geese only twice this spring. The week ended February 26 had 50 present, while 200 were observed the week ended March 12. Total use by this species amounted to 1,750 days, compared to 1,400 days use a year ago.

Total Goose Use

Total goose use this spring amounted to 435,750 days on Calhoun and 7,000 days on Batchtown, as tabulated below:

GOOSE DAY USE

Refuge	Canada geese	Snow geese	Blue geese	TOTAL
Batchtown	2,800	2,450	1,750	7,000
Calhoun	64,750	197,750	173,250	435,750
TOTALS	67,550	200,200	175,000	442,750

(d) Egrets:

There were 30 egrets observed in the Calhoun Refuge the week ended April 1, compared with three observed the same time last year. Twenty were observed the same week in the Batchtown area, compared with one last year.

(e) Shorebirds and Other Waterbirds:

Wilson snipe are increasing in this area. About 150 birds have been observed this spring as compared with 100 birds last spring. Killdeer are here in good numbers. Sandpipers and some yellow-legs were also observed.

Blue heron are here in good numbers, with an estimated 200 birds using the area. This is about the same as last year.

2. Food and Cover:

Food conditions were the best in several years as there was open water all winter. The sharecropping fields had plenty of corn for the ducks to feed on. Cornfields adjacent to the refuge had plenty of corn, but ducks did not feed in those fields as much as other years. Ducks and geese fed throughout the Mississippi bottoms from Alton, Illinois to Hannibal, Missouri, and up the Illinois River bottoms. Large numbers of ducks and geese stayed close to the Calhoun and Batchtown Refuges, where large amounts of sharecrop corn were left in the fields. Corn fed for banding purposes also had a great effect on holding the ducks in the refuges throughout January and February. By the first of March the corn was just about cleaned out, and the ducks started to shift to the Sny bottoms. The ducks left the Batchtown area earlier than they did in the Calhoun Refuge. This was probably due to the presence of more corn in the Calhoun Refuge than in the Batchtown Refuge. The draw-down in the Batchtown pool also had its effect on earlier departure of ducks.

B. Upland Game Birds:

1. Populations and Behavior:

In the Calhoun Refuge an estimated five coveys of quail used the marginal areas and areas adjacent to the refuge. In the Batchtown Refuge an estimated six coveys of quail used the refuge proper.

2. Food and Cover:

Ample food and cover are present in both areas to sustain fairly high populations of these birds. There has been no high water so far this spring to discourage upland game birds from using the bottomland.

C. Big Game Animals:

1. Populations and Behavior:

Five or six deer use the refuge in the Batchtown area. In the Calhoun Refuge, 10 known deer use the area.

2. Food and Cover:

Ample food and cover are present in both areas to take care of a much larger population of deer.

D. Furbearers:

(a) Muskrats:

The muskrat population is looking better in the Calhoun Refuge, but not so good in the Batchtown area, where fluctuation of the pool probably has discouraged them. There are more push-ups in the Stump Lake area than last year. Swan Lake shows more signs at the upper end than last year.

(b) Mink:

The mink population is still at a standstill. No more signs have been observed this year than last year. Old trappers in the vicinity report mink are very scarce. This species was the most sought after furbearer as the price was good on them.

(d) Beaver:

Beaver are increasing on all the islands on the Mississippi and the Illinois Rivers. Considerable timber is being cut by them each year. Very few were reported caught by the trappers last fall due to the low price of their pelt.

(f) Raccoon:

Raccoon are plentiful in both refuges and adjoining bottomlands. This species is still on the increase. Low trapping pressure probably accounts for their increase.

(g) Foxes:

Foxes are plentiful throughout the bottomland. Several have been observed having the mange or otherwise apparently diseased. This will probably cut the population to some extent.

E. Predaceous Birds:

Eagles were numerous in the Batchtown and Calhoun Refuges during this period. An estimated 150 eagles used the two areas, compared with 100 birds last year.

Hawks are common in all the areas. Red-tailed and marsh hawks are in the majority. They are apparently increasing a little.

Owls are common in all the timber areas. These species are also on the increase.

F. Fish:

Both game and rough fish are plentiful in the Batchtown and Calhoun Refuges.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

During the first part of January several boundary signs along the channel of the Calhoun Refuge were removed to protect them from being carried away by ice or high water. Several signs on the Maple Island area in the Batchtown Refuge were also taken up and stock-piled.

An extensive land renovation job was started on the Batchtown and Calhoun Refuges during this period. With the exception of one small tract, the permittees are doing all the clearing work. At this time we plan to encourage the permittees to clear as much land as they are capable of doing and after the easier areas are renovated we hope to move in with special heavy equipment to complete the job.

On the Batchtown area, about 35 acres of scattered willows 4 to 10 inches in diameter were removed from an old grazing unit, GU-25-2. This work was all done by hand, using a chain saw, double-bitted axe, and plenty of elbow grease. The only outside labor used was some volunteer help from the Batchtown Sportsmen's Club and local State conservation employees. The balance of the work was accomplished by Service personnel. At this time 10 acres of the unit have been plowed in preparation for a proso millet planting.

Wilson Mortland, a permittee on the Batchtown area, is presently in the process of clearing about 45 acres of medium brush in the vicinity of AU-25-4. If we are able to repair the access road to this unit, it will become a valuable addition to the Batchtown area.

At Calhoun, Sidney Bradley is in the process of renovating 15 acres. Wet conditions have handicapped this operation, but he expects to complete the job by late planting time.

Also at Calhoun, the Schulze brothers have cleared about six acres with a bulldozer.

B. Plantings:

4. Cultivated Crops:

Fifteen cooperative farming agreements were issued during this period, involving approximately 450 acres.

Unstable water levels of the Mississippi and Illinois Rivers make our farm land at Calhoun and Batchtown of the extremely high risk type. Therefore, we are unable to predict at this time the acreage or type of crop which will be grown. Present plans provide for as much corn as conditions permit. Shorter maturing grains such as millet, soy beans, and buckwheat will also form an important part of the crops raised on the lower ground.

VI. PUBLIC RELATIONS

A. Recreational Uses:

Boating was extensively done throughout March and April, especially in the Calhoun area. More boats are being used on the rivers each year.

During the period, the following recreational use was estimated for the two refuge units:

Refuge	Days Use Fishermen	Miscellaneous Use
Batchtown	3,845	690
Calhoun	9,625	1,135
TOTALS	13,470	1,825

This use is estimated only for the refuge areas proper. In the Mississippi and Illinois Rivers and in nearby areas, boating, fishing, and miscellaneous use is extremely high; while visitors to Pere Marquette run into the thousands.

B. Refuge Visitors:

Mr. W. D. Carter was here from February 21 to 24 helping on sharecropping permits.

C. Refuge Participation:

The Refuge Manager attended an evening meeting of the Alton and Wood River Sportsmen's Club at Alton on February 25. They showed the pictures, "Geese Over Illinois" and "Bobwhite in Missouri Throughout the Year", which were very good. He also attended the St. Louis, Missouri, Sportsmen's Boat Show on March 16, which was very interesting. There he saw the picture, "Cottontail in Missouri Throughout the Year", which was very good.

E. Fishing:
Sport:

Pole and line fishing started early in February. This has been the best early fishing we have had in several years. Many large strings of bass have been taken out of Swan Lake. The Batchtown area has also had good fishing. Lots of bluegill and crappie have been taken in both areas. The boat livery men report that fishing pressure has been great.

Commercial:

Commercial fishing, as reported by men in that business, is very good. The catfish run has already started, and indications are that it will be a good season.

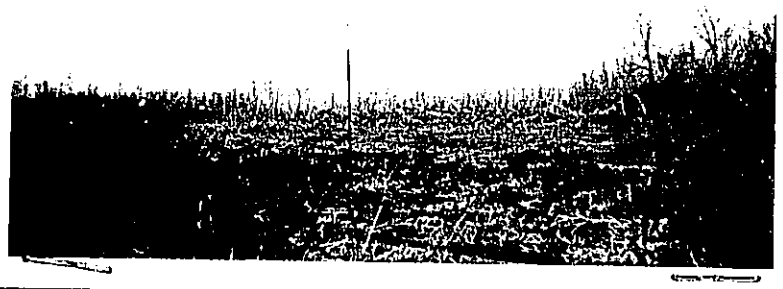
VII. OTHER ITEMS

B. **Photographs:**

See attached pages.

Ray C. Steele, Superintendent

May 5, 1955



Schultz Bros. bulldozing job. 4/1/55.

Titus tract after brush was burned. 4/1/55.

Looking west to river - starting of the plowing on the Titus tract.

Taken 2/18/55 at 3 p.m. vicinity of Swan Lake, Calhoun Refuge, Bob Meyer farm.

Taken 2/18/55 at 3 p.m. vicinity of Swan Lake, Calhoun Refuge, Bob Meyer farm.

Taken 2/18/55 at 3 p.m. vicinity of Swan Lake, Bob Meyer farm.

(2) Predacious Birds:

Eagles were numerous in the Batchtown and Calhoun Refuges during the period. An estimated 150 used the two areas, compared to 100 for the same period a year ago.

Red-tailed hawks and marsh hawks are common in ' e vicinity, and are apparently increasing a little.

Owls are fairly common in all timbered areas, but no data are available on numbers, by species. More of these birds are heard than are seen.

3-1750
Form N.
(Rev. March 1953)

WATERFOWL

REFUGE Ratcliffe MONTHS OF January TO April, 19 53

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada							100	100	200	
Cackling										
Brant										
White-fronted										
Snow							50		300	
Blue							50		200	
Other										
Ducks:										
Mallard	30,000	70,000	20,000	30,000	5,000	5,000	100,000	20,000	2,000	20,000
Black	500	1,000	300	400	100	100	2,000	100	100	200
Gadwall										
Baldpate								200	500	2,000
Pintail	6,000	2,000	1,000	500	100		10,000	1,000	2,000	30,000
Green-winged teal							200	100	200	1,000
Blue-winged teal										
Cinnamon teal										
Shoveler										500
Wood										200
Redhead	100						400	400		
Ring-necked	1,000			2,000	2,000	2,000	2,000	2,000	2,000	
Canvasback	100					1,000	1,000	500	100	100
Scaup	3,000	1,000	1,000	1,000	1,000	500	2,000	2,000	3,000	5,000
Goldeneye	200	100	200	300	300		100	200	200	
Bufflehead										
Ruddy			200						100	100
[redacted] Mergansers	200	200		400	400	400	1,000	1,000	500	500
TOTAL DUCKS	41,100	74,300	22,700	34,600	8,900	9,000	118,700	27,500	10,700	59,600
Coot:										500

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Cont. N[illegible]
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Batchtown MONTHS OF January TO April, 19 55

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:									2,800		
Canada											
Cackling											
Brant									2,450		
White-fronted									1,750		
Snow											
Blue											
Other											
Ducks:	5,000	5,000	6,000	2,000	50	25	25		2,240,700		
Mallard	100	100	100						35,700		
Black				1,000					7,000		
Gadwall	3,000	1,000	1,500	1,000					64,400		
Baldpate	10,000	10,000	8,000	2,000					578,200		
Pintail	500	300	200						17,500		
Green-winged teal		100	1,000	5,000	2,000	1,000	500		67,200		
Blue-winged teal											
Cinnamon teal	500	500	500	500	200	200	100		21,000		
Shoveler	300	400	400	400	200	200	100		15,400		
Wood									6,300		
Redhead					100	100			92,400		
Ring-necked									19,600		
Canvasback	4,000	8,000	15,000	20,000	1,000	500	300		478,100		
Scaup									11,200		
Goldeneye											
Bufflehead									2,800		
Ruddy									35,000		
[illegible] Mergansers	300	100									
TOTAL DUCKS	23,700	25,900	32,700	31,900	3,550	2,025	1,025		3,692,500		
Coot:	500	500	3,000	5,000	500	300	400		74,900		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	7,000	700	
Ducks	3,692,500	118,700	
Coots	74,900	5,000	

SUMMARY

Principal feeding areas Entire Pool 25 and adjacent cornfields.

Principal nesting areas

Reported by Edward A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Raporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior ...plicating Section, Washington, D. C. 37944
1953

3-1750
Form N[illegible]
(Rev. March 1953)

WATERFOWL

REFUGE Calhoun

MONTHS OF January TO April, 19[illegible]

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	200
Cackling										
Brant										
White-fronted										250
Snow	1,000	1,000	1,000	700	6,000	6,000	6,000	6,000		250
Blue	1,000	1,500	1,000	700	5,000	5,000	5,000	5,000		
Other										
Ducks:										
Mallard	100,000	100,000	200,000	200,000	300,000	25,000	150,000	50,000	10,000	25,000
Black	5,000	500	500	600	1,000	100	1,000	300	100	300
Gadwall								200	3,000	4,000
Baldpate							5,000	2,000	2,000	20,000
Pintail	5,000	3,000	5,000	6,000	6,000		100	200	200	1,000
Green-winged teal										
Blue-winged teal										
Cinnamon teal										500
Shoveler										300
Wood										
Redhead	200	200	500	800	1,000	1,000	1,000	500		
Ring-necked	1,000				500	500	500	500		
Canvasback	200	300	7,000	20,000	25,000	25,000	25,000	15,000	200	100
Scaup	4,000	3,000	4,000	2,000	5,000	8,000	8,000	5,000	3,000	3,000
Goldeneye	100	100	200	500	500	300	300	500	200	
Bufflehead										
Ruddy								100	200	400
[illegible] Mergansers	300	300	400	500	500	200	1,000	1,000	500	300
TOTAL DUCKS	115,800	107,400	217,600	230,400	339,300	60,100	191,900	75,300	19,400	54,900
										1,000
Coot:										

3 -17508
Cont. N[illegible]
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Calhoun MONTHS OF January TO April, 19[illegible]

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	300		150	100					64,750		
Cackling											
Brant											
White-fronted									197,750		
Snow	250		50						173,250		
Blue	250		50								
Other											
Ducks:											
Mallard	10,000	5,000	5,000	3,000	100	50	50		8,282,400		
Black	200	100							67,900		
Gadwall		300							2,000		
Baldpate	5,000	500	500	200	300				95,900		
Pintail	15,000	5,000	6,000	4,000					588,000		
Green-winged teal	500	500	200						18,900		
Blue-winged teal		100	3,000	8,000	2,000	1,000	500		102,200		
Cinnamon teal											
Shoveler	1,000	500	500	500	400	100	100		25,200		
Wood	400	300	400	400	100	100	100		14,700		
Redhead									36,400		
Ring-necked					200	100			23,100		
Canvasback									824,600		
Scaup	10,000	10,000	20,000	20,000	400	400	400		743,400		
Goldeneye									17,500		
Bufflehead											
Ruddy	200	100							7,000		
[illegible] Merganesers	200								36,400		
TOTAL DUCKS	42,300	22,400	35,600	36,100	3,500	1,750	1,150		10,885,700		
Coot:	1,500	500	2,000	6,000	1,000	500	500		91,000		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	435,750	12,000	
Ducks	20,085,700	339,300	
Coots	91,000	6,000	

SUMMARY

Principal feeding areas Swan Lake, Gilbert Lake, and cornfields adjacent to the refuge.

Principal nesting areas

Reported by Edward A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Avarage weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior [illegible]plicating Section, Washington, D. C. 37944
1953

3-1751
Form No.
(Nov. 1945)

MIGRA.. BIRDS
(other than waterfowl)

Refuge Hatchtown Months of January to April 195[illegible]

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Blue heron	3	3/11	50	4/27	50	4/27				175
Egretta	20	4/1	200	4/27	200	4/27				350
Grebe	15	3/8	100	4/1	5	4/27				200
II. Shorebirds, Gulls and Terns:										
Gulls	5,000	3/7	20,000	2/21	90	4/27				25,000
Terns	2,000	3/7	4,000	2/21	5	4/27				15,000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Crows are here all year around and plenty of them use the area.				
Bald eagle					75
Red-tailed hawk					10
Marsh hawk					40

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NK
(Nov. 1945)

MIGRA[illegible] BIRDS
(other than waterfowl)

Refuge.....Calhoun..... Months of.....January.....to.....April.....195.5...

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
White Heron	5	1/10	100	4/28	100	4/28				200
Egrets	30	4/1	125	4/28	125	4/28				300
Grebe	10	3/4	75	4/1	25	4/28				250
II. Shorebirds, Gulls and Terns:										
Gulls	4,000	1/10	10,000	2/21	100	4/28				25,000
Terns	1,000	1/10	3,000	2/21	10	4/28				15,000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Crows are here all year around and plenty of them use the area.				
Bald eagle					
Red-tailed hawk					
Marsh hawk					

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C. 59317

3-1752
Form [illegible]-2
(April [illegible]946)

UPLAND GAME [illegible]DS

1613

Refuge Batchtown Months of January to April, 19[illegible]55

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bobwhite quail									35	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form 2
(April 946)

UPLAND GAME BIRDS.

1613

Refuge Calhoun Months of January to April, 19[illegible]55

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bobwhite quail									30	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

1955

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
MAY, JUNE, JULY, AUGUST, 1955

I. GENERAL

A. Weather Conditions:

This was not as hot as last year. The month of May had a higher reading than last year, but the other three months had lower readings. The minimum temperatures were lower in May and July in 1954, but in June and August there was not much difference. This was a better summer than last year as far as weather goes.

Relative readings are shown below:

Month	Year	Maximum	Minimum	Precipitation
May	1954	85	35	2.01
	1955	92	46	1.93
June	1954	104½	49	2.01
	1955	96	46	4.32
July	1954	114	60	1.45
	1955	101	64	3.59
August	1954	102	61	3.16
	1955	101	60	.40
			TOTAL 1954	8.63
			TOTAL 1955	10.24

B. Water Conditions:

In Pool 25 draw-downs occurred in the early part of May through June but not long at any one time. Generally the water here was held up like last year. This high water retarded smartweed growth. All through August the pool was held at or above pool stage.

In Pool 26 water levels were generally more favorable. No high water was recorded this spring. Fluctuations due to manipulation of the dam were not bad in Pool 26, and no draw-down occurred during the period.

A comparison of pool levels in Pool 26, compared to the same period in 1954, is shown in the following table:

Month	Year	High	Low	Difference
May	1954	15.2	14.6	.6
	1955	16.1	14.6	1.5
June	1954	16.0	15.4	.6
	1955	15.9	15.2	.7
July	1954	15.7	15.1	.6
	1955	15.6	15.1	.5
August	1954	15.7	15.1	.6
	1955	15.4	14.8	.6

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

(a) Waterfowl:

On the Batchtown Refuge there were 550 ducks left when the period opened. The following week the number started to decrease, and by the next two weeks most all ducks were out of the area, except nesting ducks and they were scarce.

The last two weeks of the report period ducks started to increase in the area. The last week in August an estimated 300 mallards, 400 pintails, 2,000 blue-winged teal, and 400 wood ducks were present. An estimated 37,695 duck days use was made of Batchtown Refuge during the period.

The period opened at the Calhoun Refuge with 875 ducks present. By the second week the number had decreased, and by the end of the next two weeks almost all ducks had left, except nesting ducks and they were low this year. The second week in August ducks started to increase in this area. The last week in August we had an estimated 500 mallards, 200 pintails, 5,000 blue-winged teal, and 500 wood ducks. An estimated 68,355 duck days use was made of Calhoun Refuge this period.

Production was low on both areas again this year. No broods of any kind were found on the Batchtown Refuge. The Calhoun Refuge had 15 broods of wood ducks and two broods of mallards.

A comparison of broods for the 1954 and 1955 seasons is shown in the following table:

Species	Broods	Young	Year
Wood duck	8	64	1954
	15	120	1955
Mallards	0	0	1954
	2	16	1955
TOTALS	8	64	1954
	17	136	1955

Coot were present on both refuges the first three weeks of May, but none were seen after that. Coot made 2,800 days use of Batchtown and 2,100 days of Calhoun Refuge during May. This was also the total use for the period.

(d) Egrets:

Egrets showed an increase in the Batchtown Refuge, with 3,000 birds used the area as compared with 2,300 last year.

Calhoun Refuge had an estimated 3,000 birds using the area, the same figure as last year. On August 28 Dr. Green observed two snowy egrets mixed with the large number of American egrets on the Calhoun Refuge.

(e) Shorebirds and Other Water Birds:

Very few shorebirds have been observed as yet in either area.

Blue heron showed an increase in the Calhoun Refuge, with 800 using the refuge as compared with 760 last year.

Batchtown Refuge had an estimated 500 blue heron using the area as compared with 650 last year.

(f) Mourning Doves:

There are not many of this species on either refuge, but the adjacent areas had a big increase over last year. Large numbers have been observed in both counties.

2. Food and Cover:

The food and cover situation on Batchtown Refuge is not too encouraging when compared to the ideal conditions which prevailed two years ago.

This summer, as last, Pool 25 was maintained at normal pool level during most of the growing season. Since the

Batchtown Refuge lies so close to the dam, stabilized levels result in greater impoundment in the refuge than would occur if it were situated further upstream.

This sustained level militated against growth of marginal plants such as millet-smartweed, with the result that such plants are now limited to normal margins. Where they do grow they are making splendid growth, but to a limited extent in the light of two years ago. Then Pool 25 was held below normal all summer, and smartweed and millet made excellent growth not only on the margins but also extending over much of what is now water area. When the pool was brought back to normal in the fall it flooded this heavy smartweed growth, and conditions were the best we have ever had in the area.

Compared to normal, food and cover in Batchtown are good, although they are in sharp contrast to the 1953 season.

Low water in 1953 contributed to encroachment of willow over wide portions of the refuge and suggested that some form of willow control might have to be undertaken. High water for the past two summers, however, has resulted in considerable mortality of young willow growth so that control is not now too important. Hence, levels this year are not without compensation for the ultimate value in control of willow will no doubt more than offset reduced smartweed growth this season.

We have in the middle of Batchtown, about 95 acres of corn, which will make a good crop unless we have early frost, and this will afford a partial substitute for reduced natural food. Unfortunately, however, current regulations on crop manipulation within refuges do not permit proper utilization of the corn crop for the maximum benefit of birds while they are present during the shooting season when it is most important to supplement natural food. It is feared we may receive unfavorable reaction from hunters if reduced smartweed growth results in a poor harvest of ducks on contiguous open shooting areas, if at the same time we have a good corn crop within the refuge that we do not manage for the purpose of holding good shootable populations in the area. Holding our share of the corn to manipulate AFTER the hunting season may be considered poor management, for when the hunting season is over waste corn is available throughout the countryside and the refuge crop will not be as critical nor as attractive as during the open season.

On Calhoun Refuge food conditions are the best in years. The entire periphery of the lake has a margin of good aquatics at least 200 feet wide along the shores. The upper end near the power line is almost solid pondweed across the entire lake for a distance of more than 1/4 mile. Aquatics on the margins and the upper end of the lake consist mostly of American pondweed, sago, and foliosus-pusillus, mixed in with locally heavy elodea-coontail. In the vicinity of Murphy's Slough the flats are covered with aquatics, while the slough itself is solid aquatics with excellent marginal emergents of sagittaria, cattail, cutgrass, and smartweed.

The lower end of the lake, from the Schultz field across the Bradley fields, wide beds of sago occur, covering about 400 acres of the lake. This sago is seeding well, and since it is located in the portion of the refuge most frequented by waterfowl, it should make the area much more attractive.

In addition to this good growth of natural food there are approximately 175 acres of corn planted on the refuge margins, which should make about 100 bushels per acre this year. Thus, a goodly amount of corn will also be available from normal harvesting operations on the permittees' share of corn, while there may be some utilization of the refuge share. Permittees are currently enlarging their fields by clearing brush, opening up the fields to direct access from the lake in the process. It is felt this clearing to the water's edge will make the fields more attractive to ducks than in the past.

On the Bradley fields we have two small fields of kafir corn, one of which is making excellent growth, and the other which may develop if we have rain. These fields will furnish additional attraction to waterfowl using the refuge.

In the field along Gilbert Lake, we may also raise 100 bushel corn, which will furnish food for ducks there. During late summer rye was seeded in 15 acres of corn. This started making good growth when drought conditions set in, retarding growth and causing some die-off. Rains fell in the area on August 29, however, and if we get sufficient moisture for the remainder of the fall we could have good browse provided here.

Thus, food conditions on Calhoun Refuge this year are very good, and it can be expected that waterfowl will really use this area.

B. Upland Game Birds:

The quail crop on the Calhoun Refuge seems to be up as lots of quail have been observed using the marginal areas. The pool stage was not high any time this period, which was in favor of this species. Quail appear to have increased some in the Calhoun Refuge.

The Batchtown Refuge has lots of quail, with an estimated 40 pairs using the area. The cover is so heavy it is hard to tell about the number using this area. Mr. Mortland, farming the area, reports he has observed lots of quail in the area.

There is plenth of upland game food and cover along marginal areas of the Calhoun Refuge. The water has not been high this period and consequently good growth on margin areas provides good cover and food for these birds.

The Batchtown Refuge has not had any high water during this period to bother the quail. Cover is very heavy in this area and there is plenty of food there.

C. Big Game Animals:

In the Calhoun Refuge an estimated 10 deer use the area. There have been four young deer seen during this period. This represents an increase in this species on the Calhoun Refuge.

The Batchtown Refuge continues to have plenty of signs of deer using the area. Two young deer have been seen during the period. Last year an estimated six deer used the refuge. They are probably increasing somewhat in the Batchtown Refuge. Some damage to corn occurs on the refuge, but it is not too bad.

D. Fur Animals:
(a) Muskrat:

Muskrats are up in the Calhoun Refuge, with a lot more sign noted than last year. The low water has probably helped this species. Stump Lake is way up on muskrat signs, and there seems to be a good number of muskrats here.

The Batchtown area is up some too, but not as much as the Calhoun Refuge. The draw-down was not bad in this area during the period. We probably have a little increase in this area.

(b) Mink:

Mink signs are more numerous than last year in the Calhoun Refuge. More reports are received from fisherman that they saw mink while fishing than last year, indicating mink have increased this year.

The Batchtown area also looks good for mink this year. Farmers who farm the area report they saw several mink while farming. They are no doubt also on the increase here.

(c) Beaver:

Beaver signs are down in the Calhoun Refuge, and the animals seem to have moved to other areas. There are lots of signs on islands in the Mississippi and Illinois Rivers, indicating this species has decreased some.

(d) Skunk:

No signs of skunk have been seen on the Calhoun Refuge, but the Batchtown Refuge has a goodly number present. Mr. Mertland, sharecropper in the area, reports good numbers of skunks on the refuge.

(f) Raccoon:

Raccoon signs are plentiful in both areas and throughout the bottomlands on both rivers. Several farmers have reported damage done by this species to their cornfields. One farmer had about one-half acre of sweet corn close to the Batchtown Refuge and raccoon ate it up. They are on the increase in both areas.

(g) Fox:

Foxes are low in both areas and not many signs are observed. This species has decreased on the refuges, and few complaints are received regarding fox depredations.

E. Predaceous Birds:

Red-tailed hawks have been observed in fair numbers, with an estimated 50 birds in each area. However, this species is about the same as last year.

Owls are plentiful in both areas, and appear to have increased some.

A few eagles were observed during the first part of May, but they soon left for the north. There was some increase over last year.

F. Fish:

Fish are plentiful in both areas. Game fish have been taken in big numbers during this period. Commercial fishermen have flooded the market with rough fish. Lots of both kinds are found in both refuges.

The boat channel cut into Swan Lake has made the lake more available to sport fishermen, and the fishing pressure has taken a sharp jump.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

Our annual task of reconditioning all refuge posting is near completion. The absence of high flood waters this year has made the job somewhat easier than usual.

After the refuge manager spent four days clearing willows and brush on the margin of the farm access road at Batchtown it was graded by the county for a very nominal fee. A contractor started spreading creek gravel but has run out of material before completing the job. We expect to have the road in good shape by winter.

During July a wage rate survey was made in preparation for land clearing work. We now have a list of laborers to be submitted for clearance before going to work.

A compromise which was mutually satisfactory to the Service and to Dr. Happ of Principia College was worked out regarding enlarging the area to be posted out on the Portage Island group. Following this the area was reposted to include the sand bars connecting the islands in the group, thus enlarging the area to a considerable extent. This eliminated nir[illegible]blinds situated along the periphery of the islands and may result in dissatisfaction on the part of the hunters. At least we have satisfied Dr. Happ for the time being, and it may be worth the rancor which may be forthcoming from duck hunters.

B. Plantings:

4. Cultivated Crops:

Ideal weather and water conditions during this quarter have made it possible for cooperating farmers to plant almost every acre of cleared land. A majority of the permittees have been so enthusiastic that they have enlarged their present fields by clearing around the borders of existing units.

Most of the farm land on Calhoun and Batchtown has been planted to corn and yields up to 80 bushels per acre are indicated.

We have a few scattered plantings of milo, domestic millet, and kafir corn. These small plantings were more or less of an experimental nature and were made on wet soils. The plantings made on a good seed bed are progressing much better than those made on wet lumpy soils.

We believe that our cropping program is still unbalanced, with too large an acreage in corn. Next year's plans will call for more diversified crops.

The location of a few isolated farm units prevents their utilization by wildlife, so we anticipate a surplus of corn this year. Storage and hauling facilities are not available here, so it is possible that we will have to dispose of it by other means.

From a management viewpoint, corn is becoming more undesirable as a waterfowl feed crop. In most instances the birds will not utilize the standing grain. We expect crops such as buckwheat, millet, and milo to assume a greater importance in the years to come.

IV. ECONOMIC USE

A. Grazing:

One grazing permit is in effect on the Batchtown Refuge, authorizing grazing of eight cows and four horses on an intermittent basis on Corps lands.

VI. PUBLIC RELATIONS

A. Recreational Use:

Boating increased this period over last year on the Mississippi and Illinois Rivers. Boats are increasing in

numbers in this area, and on Saturdays and Sundays the rivers are jammed with boats of all kinds. This has been a good season for swimming, and a large number of people used sand bars on the rivers. Lots of picnicking was done by fishermen and others throughout the period.

Recreational use on Batchtown totaled 21,875 days, with 16,000 days of fishing and 5,875 days of miscellaneous use. A year ago use totaled over 25,000 days, so there was a slight decline this year.

On Calhoun recreational use totaled 51,750 days, including 30,500 days of fishing and 21,250 days of miscellaneous use. In 1954 use totaled 55,000 days, of which 25,450 days were spent fishing, while 29,550 days of miscellaneous use was recorded.

Comparison of recreational use is shown below:

	Days Use for Period			
	Fishing		Miscellaneous	
	1954	1955	1954	1955
Batchtown	15,100	10,000	9,940	5,875
Calhoun	25,450	30,500	29,550	21,250
TOTALS	40,550	40,500	39,490	27,125

B. Refuge Visitors:

May 31-June 3 - Refuge Manager Carter down to complete plans on the cooperative farming program and shoreline development.

July 12-14 - Refuge Manager Carter down to help on wage rate survey and farm road improvement project.

From August 22 through 29 Refuge Biologist Green checked over fields, etc., in connection with the farming program; checked vegetative conditions in the refuges; checked gravelling operations; and after a satisfactory mutual agreement was worked out with Dr. Happ of Principia College assisted the refuge manager in posting out the Portage Island group.

D. Hunting:

The squirrel season opened here August 1, but the weather was very hot the first week and hunting was poor. This hunting is on State controlled land. Reports are that

hunting was better last of August. We do not allow hunting on the refuges.

E. Fishing:
Sport:

The sport fishing on the whole was better during this period than last year. Large numbers of bass and bluegill, also crappie, were taken most every week throughout the period. The sport fishing is very good at the end of this period.

Commercial:

Commercial fishing was good during this period. They keep the market flooded most of the time. Fishermen report they have had a pretty good season, about the same as last year.

William D. Carter

WILLIAM D. CARTER
Refuge Manager, Acting In Charge
Ray C. Steele, Superintendent

September 13, 1955.

(Sgd.) R. W. Burwell

3-1750
Form M[illegible]
(Rev. March 1953)

WATERFOWL

REFUGE [illegible] MONTHS OF May TO August, 1955

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	25	25	15	15	15	15	15	15	
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal	300	200	50	20	20	20	20	20	20	
Cinnamon teal										
Shoveler	25									
Wood	100	25	50	20	20	20	20	20	20	20
Redhead										
Ring-necked										
Canvasback										
Scaup	100	100	25							
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	550	350	150	55	55	55	55	55	55	20
Coot:										

3 -1750a
Cont. N
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Patuxent MONTHS OF May TO August, 1955

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard					30	25	100	200	4,560	0	32
Black											
Gadwall											
Baldpate											
Pintail								400	2,800		
Green-winged teal											
Blue-winged teal						150	300	2,000	21,840		
Cinnamon teal											
Shoveler									175		
Wood	20	20	20	20	50	50	100	400	6,905	0	80
Redhead											
Ring-necked											
Canvasback											
Scaup									1,575		
Goldeneye											
Bufflehead											
Ruddy											
Other											
TOTAL DUCKS	20	20	20	20	80	225	500	3,200	37,695	0	112
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks			
Coots			

SUMMARY

Principal feeding areas _____

_____

Principal nesting areas _____

_____

Reported by _____

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interi[illegible]plicating Section, Washington, D. C. 37944
1953

3-1750
Form M
(Rev. March 1953)

WATERFOWL

REFUGE Calhoun

MONTHS OF May TO August, 1955

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	25	25	10	10	10	10	10	10	
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal	500	100	50	10	10	10	10	10	10	
Cinnamon teal										
Shoveler	50									
Wood	100	100		20	20	20	20	20	50	120
Redhead										
Ring-necked										
Canvasback	200	100	25							
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	875	325	100	40	40	40	40	40	70	120
Coot:										

3 -1750a
Cont. M[redacted]
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Calhoun MONTHS OF May TO August, 19 55

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard						75	100	500	5,670	2	32
Black											
Gadwall											
Baldpate											
Pintail								200	1,400		
Green-winged teal											
Blue-winged teal						400	400	5,000	45,570		
Cinnamon teal											
Shoveler									350		
Wood	120	120	120	120	120	100	200	500	13,000	15	120
Redhead											
Ring-necked											
Canvasback											
Scaup									2,275		
Goldeneye											
Bufflehead											
Ruddy											
Other											
TOTAL DUCKS	120	120	120	120	120	575	700	6,200	68,[illegible]	17	152
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks			
Coots			

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interi[illegible]plicating Section, Washington, D. C. 37944
1953

3-1751
Form N...A
(Nov. 1945)

MIG...TORY BIRDS
(other than waterfowl)

Refuge Batchtown Months of May to August 195 5

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Egrets	75	5/11	2,500	8/19	500	8/29				3,000
Herons	50	5/11	200	8/19	100	8/29				500
II. Shorebirds, Gulls and Terns:										
Gulls	100	5/6	100	5/6	25	5/29				600
Terns	200	5/6	200	5/6	50	5/29				800

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Lots of crows here the year around.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other spe es occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form N...A
(Nov. 1945)

MIG...TORY BIRDS
(other than waterfowl)

Refuge Calhoun Months of May to August 1945

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Egrets	50	5/6	2,000	8/19	1,000	8/30			400	3,000
Herons	25	5/6	400	8/19	100	8/30			200	800
II. Shorebirds, Gulls and Terns:										
Gulls	300	5/6	300	5/6	25	5/19				800
Terns	200	5/6	200	5/6	75	5/19				400

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Lots of crows here the year around.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form
(April 1946)

UPLAND G[illegible]DS

1613

Refuge Batchtown Months of May to August, 1945

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Quail	Timber, scrub brush, weed patches, pasture areas 400 acres	25	2	20	mal 60-40				160	2 broods were observed, with about 10 birds in each brood

INSTRUCTIONS.

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form [illegible]
(April 1946)

UPLAND G[illegible]DS

1613

Refuge Calhoun Months of May to August, 19[illegible]

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Quail	Timber, brush, corn-fields, and weed patches 500 acres	29	3	30	60-40 male				170	3 broods were observed, with about 10 in broods, lots of old birds

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

1955

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER, 1955

I. GENERAL

A. Weather Conditions:

The maximum temperature in September and October was lower this year than in 1954. November and December had higher readings than last year. The minimum temperatures in September, November, and December were lower than last year, while October had a higher reading. There was more ice in the rivers this year than for the past several years.

Relative readings are shown below:

Month	Year	Maximum	Minimum	Precipitation
September	1954	104	42	2.21
	1955	102	40	2.59
October	1954	92	30	2.29
	1955	85	33	4.26
November	1954	74	23	1.44
	1955	93	11	1.23
December	1954	64	21	1.98
	1955	67	7	.14
			1954 TOTAL	7.92
			1955 TOTAL	8.22

B. Water Conditions:

The river stage in Pool 26 was not bad this year. The high was lower in every month, but was near pool stage. The low was lower in September and October; November did not go below pool stage at any time; December had the same reading as last year. There was no draw-down in the Batchtown pool this year, and the river was near pool stage throughout the season.

A comparison of pool levels in Pool 26, compared to the same period in 1954, is shown in the following table:

Month	Year	High	Low	Difference
September	1954	15.5	15.1	.4
	1955	15.4	14.8	.6
October	1954	16.0	15.1	.9
	1955	15.8	14.7	1.1
November	1954	15.7	14.8	.9
	1955	15.4	15.3	.1
December	1954	15.5	14.7	.8
	1955	15.4	14.7	.7

Maximum monthly variation in 1954 was .9, compared with 1.1 in 1955.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

a. Waterfowl:

As the period opened, there were 4,310 ducks on the Batchtown Refuge and 7,675 ducks on Calhoun Refuge.

Slight influxes started on both areas in early September, building up gradually throughout September and October. It was not until November 3 that big numbers arrived. On that date one of the most pronounced flights in several years took place, with large numbers moving on through in addition to the build-up on the refuge areas. The local refuge manager does not remember such a movement for many years. This movement was apparently general throughout the Mississippi flyway at that time.

Numbers of ducks on Batchtown had crept up slowly from the 4,310 at the opening of the period to 38,000 the last of October. Following the November 3 movement, birds at Batchtown numbered 82,200, the peak for the season. By November 12 numbers dropped rapidly to 10,000 the week ended November 19, and to 2,850 the following week. The period closed with 7,700 ducks present on the refuge.

Batchtown Refuge again failed to approach the phenomenal numbers recorded in 1953, when nearly a million ducks used the area. As a matter of fact, this year's peak of 82,200 ducks was much below the peak of 162,400 found in 1954. Duck day use of Batchtown dropped from 5,709,200 days in 1954 to 2,130,695 days this fall, a decrease of over 62.5%.

One of the reasons for the drop was the continued change in food and cover conditions in the area. In 1953

Pool 25 was held very low throughout the summer, with the result that extremely heavy growths of smartweed and millet developed, only to be flooded when the pool was restored to normal just prior to the hunting season. More stable pool levels in 1954 resulted in much poorer growth of these plants, while continued stable summer levels this year created conditions we think of as "normal" for the area. Thus, although natural food and cover was average, it was well below that found in 1953. This condition was reflected in reduced waterfowl use this year.

In 1953 the peak population was recorded on the week ended November 21; in 1954 it was the week ended November 20; but this year it was nearly three weeks earlier, or the week ended November 5.

On Calhoun Refuge food conditions were even better than in 1954, creating excellent conditions for waterfowl. As a result, the peak population reached over 714,000 birds, or more than 100,000 above the 1954 peak.

On Calhoun, as on Batchtown, populations increased steadily but slowly from the beginning of the period until the flight of November 3. The week ended October 29 showed only 53,500 ducks present. This number nearly quadrupled following that flight, and the week ended November 5 found 195,800 ducks on Calhoun.

Numbers did not drop below 100,000 ducks on Calhoun from that date until the end of the period, but increased to 214,350 the following week, then to 261,200 the next week, and 280,600 the week ended November 26. The week ended December 3 found the peak of 714,800 ducks present; and as the period ended there were still 213,100 ducks on the area.

On Batchtown Refuge mallards made up 1,160,600 days use, followed by pintail with 248,500 days and scaup with 183,925. No other species reached the 100,000 mark.

Calhoun showed similar tendencies, with mallards accounting for 19,735,100 of the 21,504,875 days recorded for the period. Here, however, blue-winged teal were second with 331,100 days and scaup third with 319,550 days. Pintails were in fourth place with 226,800. Canvas-back, with 200,900 days, were the only other species to exceed 200,000 days, although there were 17 species of ducks present in numbers this fall.

With the Illinois waterfowl season opening on October 15, peaks on both areas occurred after the season opened, thus affording good shooting, as will be discussed under another heading.

A comparison of peak numbers on the two refuges for the past six seasons is shown in the following table:

	1950	1951	1952	1953	1954	1955
Batchtown	79,400	49,400	192,000	1,001,800	162,400	82,200
Calhoun	150,000	321,000	478,000	303,000	614,100	714,800

A comparison of duck day use for the past two seasons is shown in the following table:

DUCK DAY USE TABLE

Refuge	1954	1955	Per cent change
Batchtown	5,709,200	2,130,695	62.5 -
Calhoun	18,626,755	21,504,875	15.4+
	24,335,955	23,635,570	2.8-

Coot peaked at 15,000 birds the week ended October 29, and made 298,550 days use of Batchtown Refuge. On Calhoun Refuge they peaked at 35,000 the week ended November 5 and made 758,450 days use of the area.

Ducks fed extensively in cornfields in the vicinity of both refuges, and also made cornfield flights of considerable distances in the surrounding country.

b. Geese:

Canada Geese

Canada geese use of Batchtown this fall amounted to only 4,200 days, which was still more than the 945 days recorded a year ago. This year they were found on the refuge only four different times, with a peak of 250 the week ended October 29, which was the last date they were there.

On Calhoun Refuge Canada geese made 118,020 days use, more than double the 50,400 days recorded a year ago. Geese peaked at 2,200 the week ended December 17, and 1,000 were present as the period ended.

Snow Geese

On only one week (week ended October 29) were snow geese found on Batchtown Refuge, and this species accounted for only 700 days use.

Calhoun Refuge, on the other hand, had a population of 7,000 for a period of six weeks, and made 379,750 days use of the area. As the period closed, 2,000 remained on Calhoun.

Blue Geese

As with snow geese, blues used Batchtown Refuge only one week, when 200 were present, accounting for 1,400 days use.

Calhoun held a population of 6,000 for a period of five weeks, accounting for 335,650 days use. As the period closed, there were still 3,000 present on the area.

TOTAL GOOSE USE

	Canada		Snow		Blue	
Refuge	Peak	Days Use	Peak	Days Use	Peak	Days Use
Batchtown		4,200	100	700	200	1,400
Calhoun	2,200	118,020	7,000	379,750	6,000	335,650

Goose Day Use

Species	Batchtown	Calhoun	TOTAL
Canada	4,200	118,020	122,220
Snow	700	379,750	380,450
Blue	1,400	335,650	337,050
	6,300	833,420	839,720

The geese made good use of the wheat field at Calhoun Refuge, and other wheat and cornfields in the vicinity were heavily used by these birds.

c. Shorebirds:

Wilson snipe showed up in good numbers this year. An estimated 1,000 birds used the Calhoun Refuge, compared with 800 birds last year, but they did not stay long. Not many were killed during the season. The Batchtown area had an estimated 700 birds, compared with 600 last year.

Killdeer showed some increase. It is estimated that 3,000 birds used both areas, compared to 1,500 last year.

d. Egrets:

Egrets were numerous through September and October. After the duck season opened the birds soon departed. The peak concentration was September 20, with about 6,000 birds, compared with 4,000 birds last year.

2. Food and Cover:

The food and cover conditions which prevailed on the Calhoun and Batchtown Refuges were described in detail in the last narrative report. Generally speaking, these conditions were average or below at Batchtown and above average at Calhoun.

The reader will note in the populations and behavior section of this report that waterfowl populations were in direct proportion to the abundance of food on the two areas.

At Calhoun the abundance of aquatics in Swan and Gilbert Lakes seemed to be a major attraction for waterfowl, and these two areas were heavily utilized throughout the period.

In the cultivated fields adjacent to Swan Lake the permittee had harvested approximately 70 acres of corn, 30 of which were lightly disked and seeded to winter wheat. The winter wheat was utilized by the geese on the area, and both ducks and geese had cleaned up the waste corn by the middle of November.

We attempted to get some use of standing corn by opening up parts of the refuge share, but did not have much success. The refuge share of corn was left standing throughout the waterfowl season and will be knocked down after the Missouri season closes on January 5.

A small two acre plot of kaffir corn has not been touched by waterfowl at this writing; however, this was expected for the dense growth of this grain would seem to make it unattractive unless it was spaced in wide rows or disked down.

It has been mentioned that the Batchtown Refuge was short on aquatics this year, and at present that's about all that is available for the birds of this area. Although more land can be brought into cultivation, we only have about 35 acres which the birds will use at this time. On this 35 acres we had around 15 acres of standing corn and 20 of picked corn.

The renovation of an old lowland grazing unit turned out better than we expected. It was planned to plow up the grazing unit and seed it to proso millet. The area remained so wet all summer that we were able to seed only a small portion. The remainder of the unit, which was either plowed or disked, came up with a beautiful stand of smartweed. So the

smartweed combined with a little proso made a small but very attractive area for the birds on Batchtown.

As far as domestic grain is concerned, both the Batchtown and Calhoun Refuges contributed very little for waterfowl feeding during the period. All of the refuge share was standing and unavailable. With this condition in mind, the farming program on both refuges will be geared to raise grain which does not require manipulation.

B. Upland Game Birds:

The dry weather which has prevailed in this area for the past three years evidently has made the moist bottomlands of both refuges more attractive for quail for we seem to have a good population increase. Then, too, nesting and brooding weather were much improved throughout this section, and these factors seem to be responsible for increased quail numbers throughout the southern part of the State.

We have estimated the quail population on Calhoun at 100 birds and 125 on the Batchtown area.

Food and cover conditions along the periphery of Calhoun and Batchtown remain good; however, our field expansion program will probably destroy some of the good quail cover.

C. Big Game Animals:

The deer population in the Calhoun Refuge is on the increase. Four young deer and seven old ones were observed during this period. The Batchtown area also has an increase in deer, with an estimated 12 deer present.

D. Fur Bearers:
(a) Muskrat:

The muskrat population looks very good this fall and appears to have had a good increase over last year. More houses have been observed this year. The Stump Lake area adjacent to the Calhoun Refuge has a good number of houses in it this fall. The State has closed the season here in Stump Lake, and it should increase this species in all areas. Trapping pressure is not bad here.

The Batchtown area does not show any increase over last year. Most of the muskrats in this area are bank rats, and it is hard to tell how many we have.

(b) Skunk:

The skunk have showed up in the Batchtown area in goodly numbers. The sharecrop farmer reports plenty of skunk in this area. In the Calhoun Refuge there has not been any observed, but it is expected some are present.

(c) Beaver:

Beaver are holding about the same in both areas. They have been changing their location from year to year. The Batchtown area has the most of this species. Trapping pressure is not high on this species as most trappers here have not had much experience with beaver, and the price is low. Very few are taken in open season.

(d) Raccoon:

Raccoon are plentiful in all the bottomlands. Several farmers reported damage to corn by raccoon. This species is increasing in both areas. A few hunt them for the sport, but trappers don't care to catch them as the price is too low. There is more demand for the meat than the fur.

(e) Foxes:

Foxes are down in both areas this fall. A few have been observed, but not like other years. Trappers are not getting very many. Trappers report that a lot of them are mangy.

E. Predaceous Birds:

Eagles are numerous in the Calhoun and Batchtown Refuges close to the concentration of ducks. There are an estimated 100 eagles in the Calhoun Refuge and 50 in the Batchtown Refuge, about the same as last year.

Hawks are common in both areas, with red-tailed and marsh hawks in the majority. Some marsh hawks were found dead, apparently shot by duck hunters. The two species are increasing in both areas.

Owls are common in the timber areas, and are increasing some in both areas.

F. Fish:

Fish are plentiful in both the Calhoun and Batchtown Refuges. Sport fishing was very good this fall, especially bass fishing. Lots of good strings were observed. Commercial fishermen report the best channel catfish run in several years. Carp and buffalo were caught in good numbers.

III. REFUGE DEVELOPMENT AND MAINTENANCE

B. Plantings:

4. Cultivated Crops:

We have approximately 450 acres of farm land under cooperative agreement on the Calhoun and Batchtown Refuges. Almost 400 of this was planted to corn this year and high yields were expected until a late drought caused damage throughout this area. Our corn yield averaged about 40 bushels per acre, and we had only mediocre success with five acres of kaffir corn and 20 acres of fortail millet.

The recent ban on crop manipulation during the waterfowl season forced us to sell 1389.5 bushels of corn for $1389.50. These crops were raised on land received under the General Agreement with the Corps, so all proceeds derived from the sale of crops will be remitted to them.

We have approximately 2000 bushels of corn standing in the fields at the close of the period and hope it will be utilized after January 5, when we plan to roll it down.

We feel it is useless to raise corn which will be sold, so in the future we plan to raise crops which do not require manipulation; or in the case of small isolated units we are recommending that they be cash cropped.

IV. ECONOMIC USE

A. Grazing:

One grazing permit was issued and the results are shown below:

Permittee	Unit	Acres G	Use month	Rate	Total
Wilson Mortland	Gu-25-1	42	45	.50	22.50
			1	.75	.75
				TOTAL	23.25

VI. PUBLIC RELATIONS

A. Recreational Uses:

Boating and picnicking was done extensively throughout the fall on both the Illinois and Mississippi Rivers. Some pecan pickers made use of the Calhoun Refuge, although the crop was poor this year, and squirrels got most of the crop.

Considerable hunting was done in the vicinity of both refuges, accounting for most recreational use as a result of the refuges this fall. However, no hunting was permitted on either refuge. Including State of Illinois managed public hunting land adjoining the refuges, as well as non-managed hunting in the general vicinity served by refuge waterfowl, an estimated 12,000 days of hunting resulted in the Batchtown Refuge area and 24,000 days in the Calhoun Refuge area.

On the Calhoun and Batchtown Refuges proper, a total of 14,715 days of recreational use, other than hunting, was made this period. This included 2,900 days of fishing and 900 days of miscellaneous use on Batchtown; and 7,665 days of fishing and 3,250 days of miscellaneous use on Calhoun. A summary of this use is shown in the following table:

Refuge	Hunting*	Fishing	Miscellaneous	TOTAL
Batchtown	12,000	2,900	900	15,800
Calhoun	24,000	7,665	3,250	34,915
	36,000	10,565	4,150	50,715

*No hunting is permitted on the refuge areas proper, but hunting pressure on adjacent lands is high. Much of the area surrounding the refuge is under State management for public hunting, on areas formerly administered by this office. Hunting data are given here merely as a means of comparison and not meant to reflect that any hunting was done on the refuges. Part of the hunting estimated here is from non-managed lands, lying close enough to the refuges so their hunting for the most part depends on the presence of birds on the refuge areas.

B. Refuge Visitors:

Dr. W. E. Green was here November 7 through 13; Mr. W. D. Carter November 23 through 28. Messrs. Marshall Stimmett, Allen Niemeyer, Victor Blazevic, and Morgan Wilson worked in

the area the first week in December. Mr. George Winslow worked in the area December 4 through 11. Dr. W. E. Green was here December 12 and 13. Mr. Frank Bellrose was here December 17. Lots of hunters, before the season and all the time through the season, made trips to my home for information on regulations and a million other things.

C. Refuge Participation:

September 13-14: Attended conference of refuge personnel and Game Agents at Winona, Minnesota.

October 7: Attended a meeting at Batchtown, Illinois, with the Batchtown Sportsman's Club and interested hunters in company with Mr. D. O. Rettinger and Mr. Carl Keelmer, State wardens. We talked over game laws and State regulations.

D. Hunting:

Batchtown Area

Although hunters in this area looked forward to a long season, weather conditions were such that only about 50 days of hunting were actually done. The Illinois River between Swan and Gilbert Lakes, as far north as the Glades, was the only place where 60 days of hunting were done. For the first time in years the Illinois River was iced over in early December, preventing hunting for several days; then opening up again; and closing once more before the hunting season was over.

This year, however, the general area received more precipitation and many lakes and sloughs which were dry last year had water in them this fall. This caused a greater dispersion of hunters over a wider area than a year ago, and contributed to essentially the same hunting pressure as a year ago despite the fact that cold weather shortened the season.

Throughout the general area, it is estimated that as much as 10% more hunting was done. However, much of this was because of greater dispersion, for in the same areas from which data was gathered last year, hunting actually showed a decrease in the number of days use.

In the visinity of Batchtown Refuge this fall, an estimated 12,000 days of hunting were done. Of these, 6,912 were checked through the State Checking Station for the Batchtown

Public Hunting Area; and 300 were checked along the Mississippi River. The 7,212 hunters checked took a total of 11,410 ducks, for a daily average of 1.58 ducks per hunter day. Projecting this average over the entire amount of hunting done in the area served by Batchtown waterfowl indicates that about 19,000 ducks were brought to bag in the area. In addition to this, an estimated 2,500 ducks were lost as cripples. This makes an estimated total kill for the area of 21,500 ducks, which almost is the same as the total kill of 24,000 for the area in 1954, when 21,900 were brought to bag and 2,100 lost as cripples.

The season at Batchtown opened with a goodly number of hunters out, taking 1.01 birds per day. However, it was 10 days later that the average exceeded 1.50 dusks per day. The first week of November, however, produced hunting such as duck hunters dream about, and for six days in succession the average was over three ducks per day. There were only two days after that when daily success bettered 1.50 ducks per day. The last month of the season could just as well have been forgotten so far as the Batchtown Public Hunting area was concerned. Out of the final 25 days of the season, ice prevented any hunting on 15 days; and during the remaining 10 days, only 87 days of hunting were done. No hunting was done along the Mississippi River from November 25 until the end of the season. Despite this, hunting in the Batchtown area this fall will be regarded by the hunters as one of the best seasons in years.

Mallards comprised 86.56% of total checked kill in Pool 25 this fall, compared to 88.41% a year ago. Pintails were again in second place, this time making up 4.32% of total kill; green-winged teal were third at 1.96%; blue-wings fourth at 1.75%; and scaup fifth at 1.71%.

Crippling loss averaged 0.21 ducks per hunter per day, or one bird lost for each 7.52 brought to bag. This amounts to a loss of 13.30%, compared to 11.39% in 1954 and 31.44% in 1953.

It was found that 22.16% of all hunters checked this fall had limits, compared to 18.96% last year; and that 35.71% failed to bag game, compared to 26.81% last year.

Data were obtained from 7,212 hunters this fall, with 11,410 ducks, for a daily average of 1.58 ducks per day. This was below the 1.67 average of last year.

A comparison of hunter success for the Batchtown area for the 1954 and 1955 seasons is shown in the following table:

BAG CHECK SUMMARY - Pool 25

Batchtown Area

	1954	1955
No. hunters checked	3,603	7,212
No. ducks checked	6,024	11,410
Av. ducks per hunter day	1.67	1.58

Species	No.	%	No.	%
Mallard	5,326	88.41	9,876	86.56
Black	30	.49	22	.19
Gadwall	11	.19	49	.43
Baldpate	12	.21	35	.31
Pintail	194	3.22	493	4.32
G.w.teal	130	2.16	224	1.96
B.w.teal	106	1.76	200	1.75
Shoveller	7	.11	13	.11
Wood duck	-	-	34	.30
Redhead	32	.53	73	.64
Ring-neck	54	.90	144	1.26
Canvas-back	5	.08	31	.27
Scaup	108	1.79	195	1.71
Golden-eye	-	-	1	.01
Buffle-head	3	.05	14	.12
Ruddy	6	.10	5	.05
Merganser	-	-	1	.01

Hunters took ducks as follows:

4 (limit)	683	18.96	1,598	22.16
3	369	10.24	514	7.13
2	600	16.65	954	13.23
1	985	27.34	1,568	21.74
0	966	26.81	2,578	35.74

Calhoun Area

In Pool 26 an estimated 24,000 days of hunting were done in the immediate vicinity of Calhoun Refuge. Data were obtained from 10,892 of these, with 10,536 ducks, with an average of 0.97 ducks per day. On this basis, 23,250 ducks were brought to bag in the vicinity. Added to this, an estimated 3,100 ducks were crippled, for an estimated total kill of 26,350 ducks. This is slightly below the estimate of 31,000 killed in 1954.

In 1954 the average bag was 0.95 ducks per day, so the success this year was essentially the same.

Crippling loss in 1954 was placed at 9.47%, compared to 13.40% this fall.

Mallards comprised 79.71% of all ducks checked, compared to 73.09% in 1954. Blue-winged teal were again in second place, this year making up 3.32% of checked kill; while scaup were third at 3.19%; pintails fourth at 2.92%; and green-winged teal fifth at 2.10%.

It was found that 9.00% of all hunters checked this year had limits, compared to 7.12% in 1954; while 51.88% failed to bag game, compared to 47.93% a year ago.

Hunter success for the 1954 and 1955 seasons for the areas in Pool 26 in the vicinity of Calhoun Refuge is shown in the following table:

CALHOUN REFUGE AREA - Pool 26

	1954	1955
No. hunters checked	4,104	10,892
No. ducks checked	3,894	10,514
Av. ducks per day	.95	.97

Species	No.	%	No.	%
Mallard	2,846	73.09	8,398	79.71
Black	29	.74	58	.55
Gadwall	21	.54	170	1.61
Baldpate	108	2.77	121	1.15
Pintail	69	1.77	308	2.92
G.w.teal	134	3.44	221	2.10
B.w.teal	442	11.35	350	3.32
Shoveller	58	1.49	133	1.26
Wood duck	2	.05	197	1.87
Redhead	4	.10	92	.87
Ring-neck	20	.51	129	1.22
Canvas-back	6	.15	11	.11
Scaup	148	3.80	336	3.19
Golden-eye	1	.03	2	.02
Buffle-head	2	.05	7	.07
Ruddy	3	.09	-	-
Merganser	1	.03	3	.03

Hunters took ducks as follows:

4 (limit)	292	7.12	980	9.00
3	198	4.82	634	5.82
2	485	11.82	1,087	9.98
1	1,162	28.31	2,540	23.32
0	1,967	47.93	5,651	51.88

The goose kill was low on the Meyer farm. An estimated 25 blue and snow geese were killed. There were a few killed on adjacent farms, but the numbers are not known. Along the river boundary between Gilbert and Swan Lakes an estimated 20 Canada geese were killed.

E. Fishing:

Pole and line fishing up to October 20 was very good. Several good catches of bass, crappie, and blue gill were observed. Blue gill was the most sought after.

Commercial fishermen had a very good season. The catfish run was better than a year ago, and carp and buffalo were caught in good numbers. The price and demand is good in this area, being close to the big metropolitan area, where lots of fish peddlers come for fish to sell to city people. At the close of this period very little fishing was being done because of ice.

F. Violations:

Eleven cases were settled in State Court. Total fines amounted to $315.00 and the costs in the cases were $44.00. All fines were paid after pleas of guilty. The sanctuaries were respected pretty good. One violator was convicted for hunting in the refuge, and several were warned along the edge of the refuge. Considering the large number of hunters using the areas, I am well pleased with the hunters' actions.

Ray C. Steele, Superintendent

January 30, 1956.

R. W. Burney

(2) Status of Goose Flock:

No goose flock at either refuge.

(3) Public Use:

Summary of Recreational Use - 1955

Use	Spring		Summer		Fall	
	Batchtown	Calhoun	Batchtown	Calhoun	Batchtown	Calhoun
Hunting:	-	-	-	-	12,000*	24,000*
Fishing:	3,845	9,625	16,000	30,500	2,900	7,665
Misc.	690	1,135	5,875	21,250	900	3,250
TOTALS	4,535	10,760	21,875	51,750	15,800	34,915

TOTAL USE SUMMARY

Refuge	Hunting*	Fishing	Miscellaneous	TOTAL
Batchtown	12,000	22,745	7,465	42,210
Calhoun	24,000	47,790	25,635	97,425
TOTALS	36,000	70,535	33,100	139,635

*Note: No hunting is permitted on either refuge area proper, but hunting pressure on adjacent lands is high. Much of the area surrounding the refuges is under State management for public hunting on areas formerly administered as public hunting areas by this office. Hunting data are given here for comparative purposes only, and not to imply that hunting was actually done on either Batchtown or Calhoun Refuge.

(4) Use of Herbicides:

None.

(5) Geese Browse Preference:

Winter wheat. No varieties available.

(6) Predaceous Birds:

Eagles are common on both Calhoun and Batchtown Refuges, with an estimated 100 on Calhoun and 50 on Batchtown. These numbers are essentially the same as last year.

Hawks are common on both areas, too, with red-tailed and marsh hawks being the more common species. Some marsh hawks were found apparently shot by dusk hunters.

Owls are common on the timbered areas of both refuges, and are apparently increasing somewhat.

3-1750
Form M[redacted]
(Rev. March 1953)

WATERFOWL

REFUGE Batchtown MONTHS OF September TO December, 19 55

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada				50		100	200	250		
Cackling										
Brant										
White-fronted										
Snow								100		
Blue								200		
Other										
Ducks:										
Mallard	200	500	600	200	300	2,000	5,000	6,000	60,000	60,000
Black	10	25	50	25	100	100	300	400	200	100
Gadwall							100	800	2,000	100
Baldpate	100	150	200	200	300	300	1,000	3,000	4,000	200
Pintail	500	600	800	2,000	5,000	7,000	8,000	9,000	1,000	100
Green-winged teal		600	800	300	200	100	200	2,000	3,000	300
Blue-winged teal	3,000	4,000	5,000	6,000	6,000	1,000	500	1,000	100	
Cinnamon teal										
Shoveler		100	200	200	300	200	300	400	300	50
Wood	500	1,500	2,000	2,500	1,000	1,000	1,000	2,000	100	50
Redhead								300	400	100
Ring-necked							100	3,000	300	200
Canvasback						50	100	1,000	500	100
Scaup		25	100	50	100	200	500	8,000	10,000	5,000
Goldeneye										
Bufflehead										
Ruddy							200	800	200	
[redacted]							100	300	100	
TOTAL DUCKS	4,310	7,500	9,750	11,475	13,300	11,950	17,400	38,000	82,200	66,300
Coot:				100	500	5,000	10,000	15,000	6,000	5,000

3-1759a
Cont. M[redacted]
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Batchtown MONTHS OF September TO December, 19 55

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:									4,200		
Canada											
Cackling											
Brant											
White-fronted									700		
Snow									1,400		
Blue											
Other											
Ducks:											
Mallard	9,000	2,000	3,000	3,000	4,000	5,000	5,000		1,160,600		
Black	100	50	100	100	100	100	200		14,420		
Gadwall	50								21,350		
Baldpate	100								66,650		
Pintail	300	200	1,000						248,500		
Green-winged teal	100	100	200	100	50				56,350		
Blue-winged teal									186,200		
Cinnamon teal											
Shoveler			100	50					15,400		
Wood	50	50							88,250		
Redhead			100	100	100	200	300		11,200		
Ring-necked									85,200		
Canvasback	50	50	200	200		500	1,000		26,250		
Scaup	800	800	400	500	200	300	500		183,925		
Goldeneye			100	100	100	200	300		5,600		
Bufflehead											
Ruddy	50		100	50					9,800		
[redacted]		800	300	300	300	400	400		16,800		
TOTAL DUCKS	10,000	4,000	5,000	4,500	4,850	6,700	7,700		2,130,895		
Coot:	300	300	300	100	50				298,550		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	6,300	550	
Ducks	2,130,695	82,200	
Coots	298,550	15,000	

SUMMARY

Principal feeding areas A considerable amount of feeding was done on natural foods in the entire refuge and in refuge fields. Cornfield flights were also common.

Principal nesting areas

Reported by Edward A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C. 37944
1953

3-1750
Form N[redacted]
(Rev. March 1953)

WATERFOWL

REFUGE Calhoun MONTHS OF September TO December, 1955

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	25	25	30	80	600	600	600	700	1,000	1,300
Cackling										
Brant										
White-fronted										
Snow					250	500	1,000	1,500	5,000	7,000
Blue					250	500	1,200	2,000	3,000	5,000
Other										
Ducks:										
Mallard	500	800	1,000	1,000	500	500	5,000	20,000	150,000	190,000
Black	25	50	50	50	100	50	200	500	2,000	200
Gadwall							100	3,000	5,000	100
Baldpate	50	100	200	300	200	500	1,000	7,000	6,000	300
Pintail	300	400	500	1,000	2,000	1,000	3,000	3,000	2,000	6,000
Green-winged teal		500	800	300	300	100	200	7,000	8,000	2,000
Blue-winged teal	6,000	7,000	9,000	9,000	8,000	3,000	2,000	3,000	300	
Cinnamon teal										
Shoveler		50	200	100	100	200	300	400	1,000	200
Wood	800	1,000	2,000	1,000	500	700	400	700	200	100
Redhead						50	50	500	300	100
Ring-necked							100	4,000	5,000	5,000
Canvasback						100	100	500	200	100
Scaup		50	200	100	200	200	500	3,000	15,000	10,000
Goldeneye										
Bufflehead										
Ruddy						300	400	600	300	100
[redacted] Mergansers										
TOTAL DUCKS	7,675	9,950	13,950	12,850	11,900	6,700	13,350	53,500	195,800	214,[illegible]
Coot:				50	600	10,000	25,000	25,000	35,000	6,000

5-1750a
Cont. [redacted]
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Calhoun MONTHS OF September TO December, 1955

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	1,500	1,500	1,500	2,000	2,200	2,200	1,000		118,020		
Cackling											
Brant											
White-fronted											
Snow	7,000	7,000	7,000	7,000	7,000	2,000	2,000		379,750		
Blue	6,000	6,000	6,000	6,000	6,000	3,000	3,000		335,650		
Other											
Ducks:											
Mallard	250,000	275,000	700,000	375,000	500,000	150,000	200,000		19,735,100		
Black	200	300	5,000	300	500	200	300		70,175		
Gadwall	500	100							61,600		
Baldpate	2,000	1,000	200	200	200	100			135,450		
Pintail	6,000	2,000	5,000	200					226,800		
Green-winged teal	1,000	500	2,000	100	50				139,950		
Blue-winged teal									32[illegible],200		
Cinnamon teal											
Shoveler	200	300	300	100	100				24,850		
Wood	100	50							52,850		
Redhead	100	100	200	300	400	800	500		23,800		
Ring-necked									98,700		
Canvasback	100	100	500	5,000	6,000	8,000	8,000		200,900		
Scaup	400	500	500	5,000	5,000	2,000	3,000		319,550		
Goldeneye		50	500	300	400	400	500		15,050		
Bufflehead	100	100		100	100				3,150		
Ruddy	200	200	100	200	50				17,150		
[redacted] Merganser	300	300	500	400	400	500	800		28,700		
TOTAL DUCKS	261,200	280,600	714,800	387,200	513,200	162,000	213,100		21,504,675		
Coot:	5,000	1,000	500	100	100				758,450		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	833,420	15,200	
Ducks	21,504,875	714,800	
Coots	758,450	35,000	

SUMMARY

Principal feeding areas Extensive feeding was done on natural foods on the refuge, and in refuge fields. Heavy cornfield flights also occurred.

Principal nesting areas

Reported by Edward A. Davis

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interi[illegible]lication Section, Washington, D. C. 37944
1953

3-1751
Form [illegible]
(Nov. 1945)

MIGRAT[illegible] BIRDS
(other than waterfowl)

Refuge Calhoun and Bateaucam Months of September to December 1955

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Blue heron	20	9/7	300	10/15	10	12/23				
Egrets	300	9/7	5,000	9/9	11	11/2				
II. Shorebirds, Gulls and Terns:										
Gulls	1,000	9/4	20,000	12/6	10,000	12/23				
Killdeer	50	9/4	3,000	10/14	20	12/23				
Wilson snipe	200	9/4	1,700	10/22	10	12/5				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Residents all year.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form [illegible]
(April [illegible]46)

UPLAND GAME [illegible]RDS

1613

Refuge Natchitoches and Calhoun Months of September to December, 1955

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-white quail									225	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1763
Form
(June 1945)

BIG GAME

Refuge Hatchtown and Calhoun Calendar Year 1955

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer														
Hatchtown													12	
Calhoun													11	

Remarks:

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1755
Form NP-5
6[illegible]

DISEASE

Refuge Batchtown and Calhoun Year 19 55

Botulism

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks Nothing to report under this.

Lead Poisoning or other Disease

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks Nothing to report under this.

3-1756
Form 1
(April 1946)

FIS

Refuge Hatchtown and Calhoun Year 1955

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Nothing to report under this.								

REMARKS:

59322

3-1757
Form [illegible]
(April 1946)

PLAN[illegible]GS
(Marsh - Aquatic - Upland)

Refuge **Batchtown and Calhoun** Year 195**5**

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Nothing to report under this.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

Interior--Duplicating Section, Washington, D. C.

59311

3-175
Form
(April 1946)

CULTIVATED CROPS

Refuge Batchtown and Calhoun Year 1955

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
							Harvested		Unharvested		
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Wm. Clark	21642	25-1	corn	32	13.1	420	4.4	140			$140.00
Chas. Baker	21643	25-2	corn	26	3.1	80	1.0	26½			26.50
Martin Ellerman	21644	25-3	corn	37	7.6	282	2.5	94			94.00
Wilson Markland		25-4&5	corn	11	27.3	300			20.0	200	
Paul H. Johnson		25-6	corn	52	30.0	1560					renovate 30 acres
Henry Hillen	215	26-1&2	corn	33	27.0	900	9.0	300			300.00
John Erickman	216	26-3	corn	26	18.4	479	6.0	159			159.00
John W. Klaas	217	26-4&5	corn	26	23.0	600	8.0	200			200.00
Henry Benner	219	26-6	corn	20	10.0	203	3.4	67½			67.50
Harry G. Dinslager	220	26-7	corn	26	4.6	120	1.5	40			40.00
Everett Kramble	218	26-8	corn	40	7.5	300	2.5	100			100.00
Sidney L. Bradley		26-9&12	corn	69	76.0	3731			25.0	1234	
Sidney L. Bradley		26-9&11	corn	60	80.0	800					clearing land
Schulze Bros.	21641	26-10	corn	92	15.0	788	6.0	262½			262.50
W. F. Dunnam		26-12&13	corn	50	16.0	800			8.0	400	
Chester L. Perrett		26-14	corn	50	6.6	334			3.3	166	
Sidney L. Bradley		26-11	kaffir corn	30			3.0	30	2.0	20	
Sidney L. Bradley		26-11	millet	.5					20.0	10	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share Acres	Permittee's Share Bushels	Government's Share Harvested Acres	Government's Share Harvested Bu.	Government's Share Unharvested Acres	Government's Share Unharvested Bu.	Total Revenue
									$ 1,389.50
	corn	105	305	11,717	44	1389½	56	2000	
	kaffir corn	5			3	30	2	20	
	millet	20					20	10	

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage fromwhich this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, orCash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Hutchinson and Calhoun Months of September through December, 1945

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Kaffir corn	None	30	30					30	30		None
Early Fortune millet	None	200	200					200	200		None

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks Kaffir corn will be used for seed; was harvested on refuge. Millet received from Red Lake Refuge; will be used for seed.

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DUP. SEC., WA[illegible]D.C.,9323

3-1759
Form NR-9
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge Batchtown and Calhoun Year 1955

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Nothing to report under this.								

Interior Duplicating Section,
Washington 25, D. C. 84267

3-1760
Form [illegible]
(April 19[illegible])

HAYING AND GRAZING

Refuge Batchtown and Calhoun Year 19[illegible]

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From – To	Rate	Total Income	Remarks
Wilson Markland	214	Ca-25-1	42	45		May - October	.50	22.50	
				1		May - October	.75	.75	

Totals:

Acreage grazed 42 Animal use months 46 Total income Grazing 23.25

Acreage cut for hay ____ Tons of hay cut ____ Total income Haying ____

INT.-DUP. SEC., WASH., D.C. 59314

3-17[illegible]
Form N[illegible]

TIMBER [illegible]OVAL

Refuge....Batchtown and Calhoun..... Year 195[illegible]5..

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Nothing to report under this.								

Total acreage cut over.....

No. of units removed B. F.....
Cords.....
Ties.....
.....

Total income.....

Method of slash disposal.....

59315

Interior—Duplicating Section, Washington, D. C.